

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of the claims in the application:

Listing of Claims:

1. (Currently Amended) A method ~~for printing a pattern, the method~~ comprising:
determining an illumination scheme in response to ~~the a~~ pattern; and
printing the pattern, wherein said printing comprises directing, in response to the determination, at least one incident beam of radiation ~~having a fundamental frequency~~, via a medium, towards an intermediate layer ~~such as~~ each said incident beam having a fundamental frequency and serving to excite and propagate at least one a third harmonic beam ~~that propagates through at least a portion of the intermediate layer towards a radiation sensitive layer; whereas the layer, said radiation sensitive layer is being sensitive to third harmonic radiation and is substantially not sensitive to radiation of the fundamental frequency.~~
2. (Currently Amended) The method of claim 1 wherein the printing step of directing comprising comprises focusing ~~at least one~~ each incident beam of radiation onto the intermediate layer.
3. (Currently Amended) The method of claim 2 wherein a focal point of a each incident beam ~~of fundamental frequency~~ is substantially located at an interface defined by the medium and the intermediate layer.
4. (Original) The method of claim 1 wherein (i) the product of the sensitivity of the radiation sensitive layer to third harmonic radiation and the intensity of the third harmonic radiation is greater than a radiation sensitive layer threshold, and (ii) the product of the sensitivity of the radiation sensitive layer to fundamental radiation and the intensity of the fundamental radiation is less than the threshold.

5. (Currently Amended) The method of claim 1 wherein the each incident beam of ~~fundamental frequency~~ is characterized by a short duration.
6. (Currently Amended) The method of claim 1 wherein the each incident beam of ~~fundamental radiation~~ is characterized by high intensity.
7. (Currently Amended) The method of claim 1 wherein the each fundamental frequency is within the ~~ultra-violet~~ ultraviolet and extreme ~~ultra-violet~~ ultraviolet spectral range.
8. (Currently Amended) The method of claim 1 ~~wherein~~ further comprising directing at least two of the incident beams of ~~fundamental frequency~~ simultaneously towards at least two respective locations of the intermediate layer.
9. (Currently Amended) The method of claim 1 ~~whereas~~ wherein a $\chi^{(3)}$ of the medium differs from a $\chi^{(3)}$ of the intermediate layer.
10. (Withdrawn) A system for printing a pattern, the apparatus comprising: a controller, for determining an illumination scheme in response to the pattern; and optics, coupled to the controller, for directing, in response to the determination, at least one beam of radiation having a fundamental frequency, via a medium, towards an intermediate layer such as to excite at least one third harmonic beam that propagates through at least a portion of the intermediate layer towards a radiation sensitive layer; whereas the radiation sensitive layer is sensitive to third harmonic radiation and is substantially not sensitive to radiation of the fundamental frequency.
11. (Withdrawn) The system of claim 10 wherein the optics comprise at least one objective lens for focusing at least one beam of radiation onto the intermediate layer.
12. (Withdrawn) The system of claim 11 wherein a focal point of a beam of fundamental frequency is substantially located at an interface defined by the medium and the intermediate layer.
13. (Withdrawn) The system of claim 10 wherein (i) the product of the sensitivity of the

radiation sensitive layer to third harmonic radiation and the intensity of the third harmonic radiation is greater than a radiation sensitive layer threshold, and (ii) the product of the sensitivity of the radiation sensitive layer to fundamental radiation and the intensity of the fundamental radiation is less than the threshold.

14. (Withdrawn) The system of claim 10 wherein the beam of fundamental frequency is characterized by a short duration.

15. (Withdrawn) The system of claim 10 wherein the beam of fundamental radiation is characterized by high intensity.

16. (Withdrawn) The system of claim 10 wherein the fundamental frequency is within the ultra violet and extreme ultra violet spectral range.

17. (Withdrawn) The system of claim 10 further adapted to direct at least two beams simultaneously towards at least two respective locations of the intermediate layer.

18. (Withdrawn) The system of claim 10 whereas the medium has a $\chi^{(3)}$ that differs from a $\chi^{(3)}$ of the intermediate layer.